IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application. No: 10/051,442	§	
Filed: January 18, 2002	§	Atty. Dkt. No: 5150-58200
Inventor(s): Sundeep Chandhoke, Nicolas Vazquez, David W Fuller, and Christopher Cifra	§	
Title: System and Method for Graphically Creating a Sequence of Motion Control, Machine Vision, and Data Acquisition (DAQ) Operations	§	
Examiner: Hanne, Sara M.	§	
Group/Art Unit: 2179	§	

APPEAL BRIEF – CORRECTED SUMMARY

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Dear Sir/Madam:

In response to the Notice of Non-Compliant Appeal Brief mailed November 15, 2007, Appellant presents this corrected Summary of the subject matter recited in the independent claims.

V. SUMMARY OF THE INDEPENDENT CLAIMS

The present claims relate generally to the fields of computer-based motion control, computer-based machine vision, and computer-based data acquisition (DAQ). In particular, the claims relate generally to a system and method enabling a user to graphically create a sequence of motion control operations, machine vision operations, and/or DAQ operations without requiring user programming.

More particularly, independent claim 1 recites a computer-implemented method for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The method comprises displaying a graphical user interface (GUI) that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), wherein the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The method further comprises creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations selected by the user for inclusion in the sequence includes at least one motion control operation, at least one machine vision operation, and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The method further comprises storing information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 30 recites a computer-implemented method for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The method comprisesdisplaying a graphical user interface (GUI) that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), wherein the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The method further comprises creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations selected by the user for inclusion in the sequence includes at least one motion control operation, at least one machine vision operation, and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The method further comprises performing the specified sequence of operations, where the operations in the sequence implement the motion control, machine vision, and DAQ functionality of the prototype. (*See, e.g., 405 of FIG. 4; p. 23, line 26 – p. 24, line 11*).

Independent claim 36 recites a computer-implemented method for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The method comprisescreating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a

plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The method further comprises recording the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

The operations in the sequence include at least one motion control operation (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), at least one machine vision operation (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and at least one DAQ operation (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*). (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The operations in the sequence are operable to: control a motion control device (*see, e.g., p. 16, lines 25-26*) to move an object (*see, e.g., p. 23, lines 26-30; p. 2, lines 30-31; p. 39, lines 20-27*); control an image acquisition device (*see, e.g., p. 17, lines 10-11*) to acquire one or more images of the object (*see, e.g., p. 24, lines 8-11*); and control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of the object (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8; p. 42, line 29 – p. 43, line 3*).

Independent claim 37 recites a memory medium (*See, e.g., main memory 166 of FIG. 3; floppy disks 104 of FIGs. 2A and 2B; p. 13, lines 24-28*) for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The memory medium comprises program instructions executable to display a graphical user interface (GUI) that provides access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), wherein the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The program instructions are further executable to create a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25*), where creating the sequence comprises including a plurality of operations in the sequence in response to user input

selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations selected by the user for inclusion in the sequence includes at least one motion control operation, at least one machine vision operation, and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The program instructions are further executable to store information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 43 recites a system for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The system comprises a processor (*See, e.g., CPU 160 of FIG. 3; p. 20, lines 20-23*); a memory storing program instructions (*See, e.g., main memory 166 of FIG. 3; p. 20, lines 24-27*); and a display device (*See, e.g., display device of computer system 82 in FIGs. 1, 2A, and 2B; video card 180 of FIG. 3*).

The processor is operable to execute the program instructions stored in the memory to display a graphical user interface (GUI) on the display device that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), wherein the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The processor is further operable to execute the program instructions stored in the memory to create a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25*), where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations

from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations selected by the user for inclusion in the sequence includes at least one motion control operation, at least one machine vision operation, and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The processor is further operable to execute the program instructions stored in the memory to store information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 44 recites a system for creating a prototype that includes motion control, machine vision, and Data Acquisition (DAQ) functionality. The system comprises means (*see, e.g., computer system 82 of FIGs. 1, 2A, and 2B, including main memory 166 (see FIG. 3) storing a motion control prototyping environment application (see p. 20, lines 24-27)*) for displaying a graphical user interface (GUI) that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*). The set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*), one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*), and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The system also includes means (*see, e.g., computer system 82 of FIGs. 1, 2A, and 2B, including main memory 166 (see FIG. 3) storing a motion control prototyping environment application (see p. 20, lines 24-27)*) for creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without

receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations included in the sequence includes at least one motion control operation, at least one machine vision operation, and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The system also includes means (*see, e.g., computer system 82 of FIGs. 1, 2A, and 2B, including main memory 166 (see FIG. 3) storing a motion control prototyping environment application (see p. 20, lines 24-27)*) for storing information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 45 recites a computer-implemented method for creating a prototype that includes motion control and machine vision functionality. The method comprises displaying a graphical user interface (GUI) that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), wherein the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*) and one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*).

The method further comprises creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations selected by the user for inclusion in the sequence includes at least one motion control operation and at least one machine vision operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*).

The method further comprises storing information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 53 recites a computer-implemented method for creating a prototype that includes machine vision and Data Acquisition (DAQ) functionality. The method comprises displaying a graphical user interface (GUI) that provides GUI access to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), where the set of operations includes one or more machine vision operations (*see, e.g., p. 4, line 29 – p. 5, line 25 and p. 6, lines 26-29*) and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The method further comprises creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations included in the sequence includes at least one machine vision operation and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The method further comprises storing information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

Independent claim 61 recites a computer-implemented method for creating a prototype that includes motion control and Data Acquisition (DAQ) functionality. The method comprises displaying a graphical user interface (GUI) that provides GUI access

to a set of operations (*see, e.g., 801 of FIG. 10; p. 4, lines 15 – 20*), where the set of operations includes one or more motion control operations (*see, e.g., p. 4, lines 21 – 24 and p. 6, lines 12-20*) and one or more DAQ operations (*see, e.g., p. 4, lines 25 – 28 and p. 6, lines 21-25*).

The method further comprises creating a sequence of operations (*see, e.g., 403 of FIG. 4; p. 23, lines 7-9 and 19-25)*, where creating the sequence comprises including a plurality of operations in the sequence in response to user input selecting each operation in the plurality of operations from the GUI (*see, e.g., 421 of FIG. 5; p. 27, lines 4-5*). The plurality of operations are included in the sequence without receiving user input specifying program code for performing the plurality of operations. (*See, e.g., p. 5, line 30 – p. 6, line 4*).

The plurality of operations included in the sequence includes at least one motion control operation and at least one DAQ operation. (*See, e.g., p. 4, lines 6-9; p. 5, lines 27-28; p. 11, line 28 – p. 12, line 9*). The at least one DAQ operation included in the sequence is operable to control a DAQ measurement device (*see, e.g., p. 17, lines 1-2*) to acquire measurement data of a device under test. (*See, e.g., p. 6, lines 21-25; p. 17, lines 6-8*).

The method further comprises storing information representing the sequence of operations in a data structure, where the sequence of operations comprises the prototype. (*See, e.g., p. 15, lines 6-7; p. 23, lines 19-25*).

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above-referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Meyertons, Hood, Kivlin, Kowert & Goetzel P.C., Deposit Account No. 50-1505/5150-58200/JCH.

Respectfully submitted,

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